

REMARKS

Applicants' remarks on pages 8-14 of the Amendment and Request for Reconsideration filed January 13, 2006 are incorporated herein by reference in their entirety. Reconsideration of the claimed invention is respectfully requested in light of the above-shown amendments and the following additional reasons.

Rejection under 35 U.S.C. § 102(b)/103(a)

The rejection of Claims 5-17 under 35 U.S.C. § 102(b), or in the alternative under 35 U.S.C. § 103(a), over the disclosure of U.S. Patent Application No. 2002/0098407 (US '407), as evidenced by Kerr et al. ("New Polyelectrolyte Materials for High Temperature Fuel Cells") is traversed and obviated by amendment.

Claims 5 and 9 have been amended to recite a method for manufacturing a membrane electrode assembly for a solid polymer type fuel cell having a porous gas diffusion layer that comprises carbon cloth or carbon paper soaked in a dispersion comprising electrically conductive particles and water repellent particles.

In particular, as suggested by the Examiner in present Final Office Action at page 2, paragraph 5, the claims have been amended to remove the language "dispersed throughout the layer." The claims have also been amended to recite that the carbon cloth or carbon paper is "soaked" in a dispersion, which is supported by and commensurate with present specification at page 5, lines 1-10. Applicants submit that the added language sufficiently clarifies that the electrically conductive particles and water repellent particles are present throughout the layer. (See also THE AMERICAN HERITAGE COLLEGE DICTIONARY (2002), page 1313, which generally defines the verb "soak" as, *inter alia*, "thoroughly wet or saturated by"). (Emphasis added). A copy of the dictionary reference is enclosed herewith for the Examiner's convenience.

In contrast, the US '407 reference does not describe a process that includes the soaking (i.e., thorough saturation) of any particles in the carbon layer whatsoever. Therefore, the reference does not anticipate the claims. Moreover, the reference imples that the gas diffusion properties are reduced if the electrically conductive particles and water repellent particles are present throughout the carbon layer. (See MPEP § 2141.02, explaining that "prior art must be considered in its entirety, including disclosures that teach away from the claims"; and MPEP § 2143, explaining that "proposed modifications cannot render the prior art unsatisfactory for its intended purpose"). In particular, the reference recites at paragraphs [0022] and [0023]:

with respect to the carbon layer made of a fluororesin and carbon black, to be formed on the porous carbon substrate, its components preferably infiltrate into pore portions of the porous carbon substrate to some extent . . .

[however] . . . if the components of the above carbon layer infiltrate in a depth exceeding 50 μm from the surface of the porous carbon substrate in a thickness direction, since the carbon layer has poor gas diffusion properties, there is fear that the gas diffusion properties of the porous carbon substrate in a plane direction may significantly decrease. In view of the gas diffusion properties, the depth of the infiltration portions of the components of the carbon layer is preferably shallow regardless of the thickness of the porous carbon substrate . . .

(Emphasis added).

In light of the above-disclosure of the reference, there is clearly no intention to include the presence of conductive particles and water repellent particles throughout the carbon layer. Further, there would be no desirability to modify the reference in the presently claimed manner, since such a modification would render the layer unsatisfactory for its intended purpose. Therefore, the present claims are not obvious in view of the reference.

Applicants note that the Examiner asserts in the present Final Office Action at page 7, lines 4-7, that Applicants' previous argument that "Applicants do not impregnate the intermediate lamination layer body 1 with a solution containing the solvent-soluble fluorine-

containing polymer having no ion exchange group immediately before the heat treatment of the intermediate lamination body 1” is not commensurate in scope with the claims. However, Applicants point out that neither the present claims nor the present specification recite or indicate whatsoever the above-mentioned impregnation. Therefore, Applicants’ argument is entirely commensurate in scope with the claimed invention, which should be read in light of the disclosure of the present specification.

Accordingly, withdrawal of the rejection is requested.

Rejection under 35 U.S.C. § 112, First and Second Paragraphs

The rejection of Claims 5-17 under 35 U.S.C. § 112, first and second paragraphs is traversed and obviated by amendment.

As shown and discussed above, the claims 5 and 9 have been amended to remove the phase “dispersed throughout the layer.” The claims have also been amended to recite that the carbon cloth or carbon paper is “soaked” in a dispersion, which is supported by and commensurate with present specification at page 5, lines 1-10.

Regarding claim 14, the claim has been amended to remove the phrase “at least about” to make the phrase more commensurate in scope with the disclosure. However, the recitation of “33 wt. %” has not been removed, since the wt. % can be calculated from the disclosure at page 4, line 33 through page 5, line 4. In particular, the definiteness requirement of 35 U.S.C. §112, second paragraph “is satisfied when the relevant values [of a component recited in a claim] can be ‘calculated or measured.’” (See generally *Marley Mouldings Ltd. v. Mikron Industries, Inc.*, 417 F.3d 1356, 75 USPQ2d 1954 (Fed. Cir. 2005) (reversing a district court for holding that all of the claims of a patent were invalid for indefiniteness because the means to calculate a percent volume were not specified in the patent)).

Application No. 10/668,159
Reply to Office Action of March 30, 2006

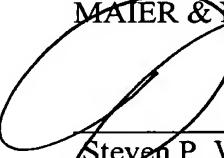
Accordingly, withdrawal of the rejections is requested.

Applicant submits that the application is now in condition for allowance. Early notification of such allowance is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicant's undersigned representative at the below listed telephone number.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Steven P. Weihrouch
Attorney of Record
Registration No. 32,829

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)

Daniel R. Evans, Ph.D.
Registration No. 55,868

The
American Heritage®
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FOURTH EDITION

2007 AVAILABLE ON



Houghton Mifflin Company
Boston • New York

snub-nosed

sob



snowshoe

BEST AVAILABLE CO.

| | |
|-----------|-----------|
| a pat | oi boy |
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| ār father | ōo boot |
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| ī pit | th thin |
| ī pie | th this |
| ir pier | hw which |
| ō pot | zh vision |
| ō toe | ə about |
| ō paw | item |

Stress marks:

'(primary);
'(secondary), as in
lexicon (lēk'si-kōn')

one and mounded on top
f of NW Wales rising to some

mass or bank of snow piled up

Any of several bulbous plants, having solitary nodding or sprouting, fall of snow, 2. The amount of snow or in a specified area, incing made of slats used for lifting onto walls, or the large expanse of snow.

A single flake of snow, esp. of open herbs of the genus *Primula*, shy fruit, 3. See snow *boomerang*, iceland wild goose, 4. Reeds in Arctic regions, seen as an adult.

isum'ar) n. A woody plant (genus *omentosum*) native to Europe and white flowers.

to deceive, overwhelm, or destroy.

line mammal (*Panthera*) having long thick white hair, like a leopard.

itudinal boundary or regionally covered, such as indicating latitudinal boundaries, the extent of snow cover, 2. King) n. Production of particles for ski slope.

A human figure made of snowballs on top of a peak, (mās) A peak, 4. *CO*.

1. The runoff from snow, such runoff occurs.

bell', -ma-) n. A small, rounded tanklike treads, riding on snow. [snow

SNOW/•BIL'ING n. (snō'ōn-thā-mōn') (Euphorbia marginata) with marginate leaves.

5. An area of natural snow, in the warmer months, of the common peach, pod of this plant.

hite ice particles that fall upon hitting a surface.

aphytophytic plant (plant in North America having

n. 1. A plowlike device on roads and railroad tracks, in which the tips of the tines are progress. ♦ intr.v. plowed, plowplow in skiing.

2. An oblong or rectangular strip that is attached to a sled, 3. *tr.v.* -shoed, -shoe-ned, -sho'er n.

medium-sized hare (*Lepus*) having large, heavy ears and brown in summer, (m'ñ) n. A storm with ice, 2. A child's zippered winter coat.

nowblower, 3. A deep tread or stud surfaces.

-, -wit') adj. White and black, -est 1. Abounding in snow, 2. Resembling snow, 3. Resembling snow, 4. -snow/•NESS n.

hium-sized egret (*Threskiornis*) with yellow feet, found in

diurnal owl (*Nyctea*) having snow-white plumage.

bbed, snub/•BING, snubbed 2. To dismiss, 3. *Nautical* a. To turn (a vessel) by turning out) by turning out, for example, a cigarette, for example.

or affront. 2. *Nautical* a. In checking, as of a rope or running out. ♦ adj. Unusually short: a snub nose. [ME snub, to rebuke.] —snub/ber n.

snubbed (snüb'nozd') adj. 1. Having a short turned-up nose, 2. Having a very short barrel: a snub-nosed pistol.

(nük) v. *Usage Problem* A past tense and a past participle.

See Usage Note at *sneak*.

(snüf) v. snuffed, snuff/•BING, snuffs —tr. 1. To inhale

through the nose; snuff. 2. To sense or examine by smelling.

—intr. To sniff; inhale. ♦ n. The act of sniffing or the smell produced by it. [ME snuffen, to snuff a candle, sniffle, —snuff, snuff. See SNUFF.]

(snüf) n. The charred portion of a candlewick. ♦ tr.v.

snuff/•BING, snuffs 1. To extinguish: snuffed out the candle.

2. To put a sudden end to; destroy: lives snuffed out by war.

3. To kill; murder. 4. To cut off the charred portion of (a candlewick). [ME snoffe, poss. of LGer. orig.]

(snüf) n. 1a. A preparation of finely pulverized tobacco

that can be drawn up into the nostrils by inhaling. b. The quantity

of tobacco that is sniffed at a single time; a pinch. 2. A pow-

der substance, such as a medicine, taken by sniffing. ♦ intr.v.

snuff/•BING, snuffs To use or sniff snuff. —idiom: up

all informal 1. Normal in health. 2. Up to standard; ade-

quate. Du. snuff, short for snufstab: Du. snuffen, to sniff; see Du. snuk, tobacco.]

(snüf) box (snüb'boks') n. A small, often decorated box with a lid, used for carrying snuff.

(snüf) n. One who uses snuff.

(snüf) n. 1a. A candlesnuffer. b. One who snuffs candles. 2. *snuffers* An instrument resembling shears, used for snuffing the snuff or extinguishing candles.

(snüf) n. *Slang* A movie in a purported genre of explicit pornography culminating in the actual violent death of a participant.

(snüf) n. 1. *Informal* 1. Normal in health. 2. Up to standard; ade-

quate. Du. snuff, short for snufstab: Du. snuffen, to sniff; see Du. snuk, tobacco.]

(snüf) v. -fled, -flying, -flies —intr. 1. To breathe noise

through a blocked nose. 2. To sniff. 3. To talk or sing naively. —tr. 1. To utter in a snuffling tone. ♦ n. 1. The act of sniffing or the sound produced by it. 2. *snuffles*. The sniffles. Du. snuffelen, to sniff about, prob. freq. of snuffen, to sniff. [ME snuven.] —snuff'er n. —snuff'fly adj.

(snüf) adj. snug/•ger, snug/•gest 1. Comfortably sheltered. 2. Small but well arranged. 3a. Closely secured and compact. b. Close-fitting. c. *Nautical* Seaworthy. 4a. Freedom from financial worry. b. Safe; secure. ♦ v.

2. *snug/•gung*, snugs —tr. To make snug or secure. 3. To nestle; snuggle. —phrasal verb: snug down *Nautical* To make (a vessel) to weather a storm, as by taking in sail. [Of origin.] —snug, snug/•fly adv. —snug/•ness n.

(snüf) n. *Chiefly British* A very small private room in a pub, like a *category*.]

(snüf) n. pl. -ies *Chiefly British* A snug position.

(snüf) v. -gled, -gling, -gles —intr. 1. To lie or sit together; cuddle. 2. To curl up closely or comfortably; nestle. —tr. 1. To draw close or hold closely, as for comfort or in nestling. [Frequentative of SNUG.]

(snüf) n. 1. In the condition or manner expressed or indicated; nest the brush so. 2. To the amount or degree expressed or indicated, to such an extent: She was so weary that she fell. 3. To amount to such an evident degree: The idea is so obvious. 4. As a result of the reason given; consequently: She was weary and so fell. Afterward; then: to the gas station and so home. 6. In the same, likewise: You were on time and so was I. 7. Apparently: Used in expressing astonishment, disapproval, or sarcasm: Do you think you've got troubles? 8. In truth; indeed: You said, "I am so!" ♦ adj. 1. True; factual: It isn't so. 2. In truth: Everything must be exactly so. ♦ conj. Usage Problem: So with the result or consequence that: He failed to appear, so we without him. 2. In order that: I stayed so I could see you. 3. Such as had already been suggested or specified; the. 4. As a result of surprise or comprehension: So! You've finished at last, so as to In order to, so many. 1. Forming an unspecified number: so many memos each week. 2. Forming a group: so many tigers, so much. 1. In that degree; to that extent; the better. 2. In such a degree; to such an extent: so much, so ideas. 3. So great in quantity, degree, or extent: so much. 4. Equivalent to in quantity, degree, or extent: so much. 5. An unspecified amount or degree; so much a yard. 6. That can be said or done. Used to summarize or disapprove of that: so much as Used as an intensive to indicate something unexpected; even: wouldn't so much as smile, so in order that. 2. With the result or consequence that, so used to express contempt or lack of interest. [ME < OE

so. —so in App.]

(snüf) Many critics and grammarians have insisted that followed by that in formal writing when used to introduce giving the reason for or purpose of an action. But is best regarded as a stylistic preference; in such clauses is usually omitted even by reputable writers in formal

contexts, as in They will double up, so that room can be found for the guests. Both so and so that are acceptably used to introduce clauses that state a result or consequence: The bridge was closed, so (or so that) we went back. So is frequently used in informal speech to string together the elements of a narrative. This practice should not be carried over into formal writing, which generally requires that connections be made more explicit. See Usage Note at *sneak*.

so² (sō) n. *Music* Variant of sol¹.
so abbr. 1. seller's option 2. significant other 3. strikeout
so or So abbr. 1. south 2. southern

soak (sōk) v. soaked, soak/•BING, soaks —tr. 1a. To make thoroughly wet or saturated by or as if by placing in liquid. b. To immerse in liquid for a period of time. 2. To absorb (liquid, for example) through or as if through pores or interstices: soaked up the milk. 3. To remove (a stain, for example) by continued immersion: soaked out the grease spots. 4. *Informal* To take in or accept mentally, esp. eagerly and easily: soaked up the gossip. 5. *Informal* a. To drink (alcoholic liquor), esp. to excess. b. To make (a person) drunk. 6. *Slang* To overcharge (a person). —intr. 1. To be immersed until thoroughly saturated. 2. To penetrate or permeate; seep: Let their words soak in. 3. *Slang* To drink to excess. ♦ n. 1a. The act or process of soaking. b. The condition of being soaked. 2. Liquid for soaking something. 3. *Slang* A drunkard. [ME soken < OE sōcan.] —soak'er n.

soak/•age (sō'kij) n. 1a. The process of soaking. b. The condition of being soaked. 2. The amount of liquid that soaks into, through, or out of an object.

so-and-so (sō'ən-sō) n., pl. -sos 1. An unnamed or unspecified person or thing. 2. *Informal* A sort of a gun.

soap (sōp) n. 1. A cleansing agent made from a mixture of the sodium salts of various fatty acids of natural oils and fats. 2. A metallic salt of a fatty acid. 3. *Slang* Money, esp. that which is used for bribery. 4. *Soap opera*. ♦ tr.v. soaped, soap/•BING, soaps 1. To treat or cover with or as if with soap. 2. *Informal* To soft-soap; cajole. 3. *Slang* To bribe. —idiom: no soap *Slang* 1. Not possible or permissible. 2. Unsuccessful; futile. [ME sōpe < OE sōpe.]

soap/•bark (sōp'bärk') n. 1. A Chilean evergreen tree (*Quillaja saponaria*) of the rose family, having bark used as soap and as a source of saponin. 2. The bark of this tree.

soap/•berry (sōp'bēr') n. 1a. Any of various chiefly tropical trees of the genus *Sapindus*, having pulpy fruit that lathers like soap. b. This fruit. 2. The buffalo berry.

soap/•box (sōp'bōks') n. 1. A carton in which soap is packed. 2. A temporary platform used while making an impromptu or non-official public speech. ♦ intr.v. -boxed, -box/•BING, -box'es *Informal* To engage in impromptu or nonofficial public speaking, often flamboyantly. —idiom: on (one's) soapbox Speaking one's views passionately or self-importantly.

soap/•bubble n. 1. A bubble formed from soapy water. 2. Something beautiful but transient or illusory.

soap/•opera n. 1. A drama, typically performed as a serial on daytime television or radio, characterized by stock characters and situations, sentimentality, and melodrama. 2. A series of experiences characterized by dramatic displays of emotion. [< its orig. having been sponsored by soap companies.]

soap/•plant n. 1. Any of several bulbous plants of the genus *Chlorogonium*, esp. *C. pomiferum*, of western North America, having small white flowers and bulbs that produce a soapy lather when crushed. 2. Any of various plants having parts used as soap.

soap/•stone (sōp'stōn') n. A soft metamorphic rock composed mostly of the mineral talc. [< its smooth soapy feel.]

soap/•suds (sōp'sūdz') pl.n. Suds from soapy water.

soap/•wort (sōp'wōrt', -wōrt') n. See bouncing Bet. [< its yielding a soapy substance when the leaves are bruised.]

soap/•y (sōp'ē) adj. -i•er, -i•est 1. Consisting of or containing soap. 2. Covered with soap. 3. Resembling soap. 4. *Slang* Uncouth; oily. —soap/•ly adv. —soap/•iness n.

soar (sōr, sōr) intr.v. soared, soar/•BING, soars 1. To rise, fly, or glide high and with little apparent effort. 2. To climb swiftly or powerfully. 3. To glide in an aircraft while maintaining altitude. 4. To ascend suddenly above the normal or usual level: Our spirits soared. ♦ n. 1. The act of soaring. 2. The altitude or scope attained in soaring. [ME sooren < OFr. essorer < VLat. *eaurāre: Lat. ex-, ex- + Lat. aura, air (< Gk. aúrā, breeze; see AURA).] —soar'er n. —soar/•ing•ly adv.

soar/•ing (sōr'ing, sōr') n. The act of gliding while maintaining altitude, esp. the sport of flying a heavier-than-air craft by using ascending currents of air.

so•a•ve (sō'āvē) n. A dry white Italian table wine. [Ital. < Lat. suavis, sweet, delightful. See swād- in App.]

sob (sōb) v. sobbed, sob/•BING, sobs —intr. 1. To weep aloud with convulsive gasping; cry uncontrollably. See Syns at cry. 2. To make a sound resembling that of loud weeping. —tr. 1. To utter